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# The Virginia Journal of Science

VOL. III

APRIL, 1942

No. 4

## Virginia Academy of Science

SMITHSONIAN INSTITUTION  
MAY 13 1942  
NATIONAL MUSEUM



## PROGRAM Twentieth Annual Meeting

Roanoke, Virginia

Thursday, Friday and Saturday

May 7th, 8th and 9th, 1942

# *The Virginia Journal of Science*

Official journal  
of the  
VIRGINIA ACADEMY OF SCIENCE

GEORGE W. JEFFERS, *President*, State Teachers College, Farmville, Va.

E. C. L. MILLER, *Secretary-Treasurer*, Medical College of Virginia, Richmond, Va.

SIDNEY S. NEGUS, *Assistant Secretary-Treasurer*, Medical College of Virginia, Richmond, Va.

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# Virginia Academy of Science

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## RAILROAD AND BUS SCHEDULES TO ROANOKE

*(Subject to Change Without Notice)*

## NORFOLK AND WESTERN RAILWAY

Lv. Alexandria.....	Sou. Ry.....	9:15 AM No. 45	5:05 PM No. 17
Lv. Charlottesville.....	Sou. Ry.....	11:25 AM No. 45	7:46 PM No. 17
Lv. Lynchburg.....	N. & W. Ry.....	12:55 PM No. 45	9:50 PM No. 17
Ar. Roanoke.....	N. & W. Ry.....	2:01 PM No. 45	11:01 PM No. 17
Lv. Williamsburg.....	C. & O.....	10:27 AM No. 47	8:30 PM No. 43
Ar. Richmond.....	C. & O.....	11:25 AM No. 47	9:30 PM No. 43
Lv. Richmond.....	A. C. L.....	1:55 PM No. 25	10:25 PM No. 27
Ar. Petersburg.....	A. C. L.....	2:40 PM No. 25	11:10 PM No. 27
Lv. Norfolk.....	N. & W. Ry.....	1:30 PM No. 3	9:35 PM No. 15
Lv. Petersburg.....	N. & W. Ry.....	3:10 PM No. 3	11:35 PM No. 15
Lv. Farmville.....	N. & W. Ry.....	4:48 PM No. 3	1:30 AM No. 15
Lv. Lynchburg.....	N. & W. Ry.....	5:57 PM No. 3	3:15 AM No. 15
Ar. Roanoke.....	N. & W. Ry.....	7:15 PM No. 3	4:45 AM No. 15
Lv. Danville.....	Sou. Ry. 5:25 AM No. 30	12:22 PM No. 36	7:40 PM No. 34
Ar. Lynchburg.....	Sou. Ry. 7:05 AM No. 30	1:55 PM No. 36	9:15 PM No. 34
Lv. Lynchburg.....	N. & W. 7:15 AM No. 1	3:40 PM No. 23	9:50 PM No. 17
Ar. Roanoke.....	N. & W. 8:55 AM No. 1	5:20 PM No. 23	11:01 PM No. 17
Lv. Martinsville.....	N. & W. Ry.....	9:04 AM No. 34	4:37 PM No. 22
Ar. Roanoke.....	N. & W. Ry.....	11:35 AM No. 34	6:30 PM No. 22
Lv. Bristol.....	N. & W. Ry.....	7:00 AM No. 14	10:45 AM No. 46
Lv. Emory.....	N. & W. Ry.....	7:41 AM No. 14	
Lv. Marion.....	N. & W. Ry.....	8:18 AM No. 14	
Lv. Pulaski.....	N. & W. Ry.....	9:53 AM No. 14	1:02 PM No. 46
Ar. Roanoke.....	N. & W. Ry.....	11:50 AM No. 14	2:30 PM No. 46

## VIRGINIAN RAILWAY

Lv. Norfolk.....	Va. Ry.....	8:00 AM No. 3
Ar. Roanoke.....	Va. Ry.....	4:00 PM No. 3

## ATLANTIC GREYHOUND BUS LINES

Lv. Norfolk.....	7:15 AM	11:45 AM	1:15 PM
Lv. Richmond.....	10:45 AM	3:15 PM	5:10 PM
Lv. Farmville.....	12:45 PM	5:15 PM	7:00 PM
Lv. Lynchburg.....	2:30 PM	6:50 PM	8:30 PM
Ar. Roanoke.....	4:10 PM	8:30 PM	10:10 PM
Lv. Harrisonburg.....	8:15 AM	12:50 PM	2:05 PM
Lv. Lexington.....	10:05 AM	2:45 PM	4:10 PM
Ar. Roanoke.....	11:35 AM	4:15 PM	5:40 PM

## CONSOLIDATED BUS LINES

Lv. Blacksburg.....	10:45 AM	2:45 PM	7:00 PM
Ar. Roanoke.....	11:59 AM	4:00 PM	8:15 PM
Lv. Danville.....	8:00 AM	1:30 PM	6:45 PM
Lv. Martinsville.....	9:55 AM	3:40 PM	8:05 PM
Ar. Roanoke.....	11:40 AM	5:25 PM	9:40 PM

## OVERNIGHT ACCOMMODATIONS

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Hotel registrations may be obtained at the following daily rates:

	<i>Single Room (One Person)</i>	<i>Double Room Double Bed</i>	<i>Two Persons Twin Beds</i>
*Hotel Roanoke.....	\$2.50 to \$5.00		\$5.00 to \$8.00
Hotel Patrick Henry.....	\$2.50 to \$5.00		\$5.00 to \$8.00
Ponce DeLeon Hotel.....	\$2.00 to \$2.50	\$3.50 to \$4.00	\$4.00 to \$5.00

The above rooms are all with bath. It will be advisable to make hotel reservations in advance.

A list of Tourist Homes and Tourist Camps will be available at the registration desk.

Arrangements may be made with the hotels for a group of 4 to 8 students to occupy a room, sleeping on cots, at \$1.50 each.

\*Registration, exhibits, and meetings of the Academy will be held at Hotel Roanoke.

NOTICES AND INFORMATION

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Telephone Calls—Please have all calls made through Roanoke 7321.

Exhibits and Demonstrations—The industrial and educational exhibits are on display in Peacock Alley.

Friday Night Banquet—Dress may be either formal or informal. Make reservations before 4 P. M. Friday at \$1.35 per plate.

Friday Noon Lunch—No special luncheon has been arranged for this time. Various groups of friends may want to arrange their own luncheon parties at restaurants or hotels in Roanoke.

Junior Academy of Science—Headquarters for the Junior Academy meetings will be at Jefferson High School, Roanoke, Virginia, located at the corner of Campbell Avenue and Sixth St. The "Raleigh Court" or "West End" street cars go directly from downtown Roanoke to Jefferson High School.



# General Program of the Twentieth Annual Meeting

ROANOKE, VIRGINIA

1942

HOTEL ROANOKE—HEADQUARTERS

## Thursday, May 7

7:30 P. M. Academy Conference, Ball Room, Hotel Roanoke.

## Friday, May 8

8:30 A. M. Registration, Palm Court, Hotel Roanoke.

9:30 A. M. Section Meetings, Hotel Roanoke.

12:30 P. M. Lunch.

2:00 P. M. Section Meetings, Hotel Roanoke.

7:15 P. M. Banquet, Ball Room, Hotel Roanoke.

Address of Welcome by Mr. H. Felix Sanders.

Response by President George W. Jeffers.

Presentation of the Annual Research Prize of  
the Academy and the Jefferson Prize by Dr.  
Frank C. Vilbrandt.

Address—Dr. W. H. Sebrell, Jr., *Chief, Division of Chemotherapy, National Institute of Health.*

## Saturday, May 9

9:00 A. M. Section Meetings, Hotel Roanoke.

12:00 Noon General Business Meeting, Rooms A-D, Hotel  
Roanoke.



## Section of Astronomy, Mathematics, and Physics

ISABEL BOGGS, *Chairman*

W. H. KEEBLE, *Secretary*

FRIDAY, MAY 8—9:45 A. M.

*Parlor 224, Hotel Roanoke*

1. Reverberation Period Measurement of Auditoriums.  
F. B. Haynes; *Virginia Polytechnic Institute.*
2. X-Ray Analysis of the Time Softening Property of a Lead-Tin Alloy.  
Miss Bertha Weaver; *Virginia Polytechnic Institute*
3. Some Temperature Effects On the Residual Charge in Paraffin-Paper Condensers.  
W. M. Hickam; *Virginia Polytechnic Institute.*
4. Thermodynamics of Irreversible Processes.  
J. Emory Cook; *Virginia Polytechnic Institute.*
5. The Inscribed and Circumscribed Similar Conics of a Triangle.  
B. Z. Linfield; *University of Virginia.*
6. A Discussion of an Elliptic Integral.  
J. E. Williams; *Virginia Polytechnic Institute.*
7. Absolute Norlund and Abel Summability.  
Leonard McFadden; *Virginia Polytechnic Institute.*
8. A Comparator for X-Ray Powder Diffraction Patterns.  
W. Richardson; *Virginia Polytechnic Institute.*
9. Recent Changes in Map Interpretation.  
F. N. Hibbard; *Weather Bureau, Richmond, Virginia.*

FRIDAY, MAY 8—2:00 P. M.

10. Early American Astronomers.  
S. A. Mitchell; *Leander McCormick Observatory.* (30 min.)
11. Parallaxes on the Assembly Line.  
Dirk Reuyl; *Leander McCormick Observatory.* (60 min.)

## SATURDAY, MAY 9—9:00 A. M.

12. A Demonstration of the Construction of Nomographs.  
Clifton B. Cosby; *John Marshall High School*. (20 min.)
13. Simple and Inexpensive Apparatus for Preparation of Mirrors by Evaporation.  
F. L. Robeson; *Virginia Polytechnic Institute*.
14. Some Social Implications of Scientific Progress.  
R. E. Loving; *University of Richmond*. (25 min.)
15. War Gives New Meaning to Physics Courses for College Women.  
Miss Ann Timberlake; *Mary Baldwin College*.
16. College Mathematics In a Country At War.  
James S. Miller; *Emory and Henry College*.
17. Information Please. Unrehearsed answers to the general question "How do you do it in your college?"

## Section of Bacteriology

FRIDAY, MAY 8—9:30 A. M.

*Parlor 218, Hotel Roanoke*

1. Streptococci Resistant to Sulfonamide Therapy.  
George McL. Lawson; *University of Virginia*. (Lantern slides, 15 min.)
2. A Study of Some Physiological Reactions of Lower Organisms to Para-Amino-Benzoic Acid.  
Edward M. Lavor, Frederick F. Ferguson and V. Van Alderman; *Norfolk General Hospital and Norfolk College of William and Mary-Virginia Polytechnic Institute*. (Balopticon Projection, 10 min.)
3. Further Notes on the Reactions of Certain Lower Organisms to the Sulfonamide Drugs.  
Edward M. Lavor and Frederick F. Ferguson; *Norfolk General Hospital and Norfolk College of William and Mary-Virginia Polytechnic Institute*. (10 min.)
4. A Simplified Method for Anaerobic Plate Cultures.  
William E. Bray and Jeanette S. Carter; *University of Virginia*. (15 min.)
5. Human Infection Caused by Salmonella San Diego.  
William E. Bray; *University of Virginia*. (10 min.)
6. Cultural Studies of Staphylococci Isolated from Shellfish.  
Herbert Birtha, Velma Brewington, Alethia Greene, William Quivers, and Lilly Riddick; *Hampton Institute*. (15 min.) (Introduced by T. W. Turner.)
7. Quantitative Determinations of Myxoma Virus in Nasal Washings, Blood, Feces and Urine and Their Relations to Transmissibility.  
Ralph B. Houlihan and George McL. Lawson; *University of Virginia*. (Lantern, 15 min.)
8. Kodachrome Photomicrography.  
Kenneth B. Grim; *University of Virginia*. (35 mm. Kodachrome, 30 min.)

FRIDAY, MAY 8—2:00 P. M.

Business Meeting of the Virginia Branch of the Society of American Bacteriologists.

## FRIDAY, MAY 8—3:00 P. M.

## Symposium: The Laboratory and the War Effort.

1. Human Plasma and Blood Transfusions.  
Lt. Commander Shawlker (M. C.); *U. S. Navy*. (Lantern, 30 min.) (Introduced by L. A. Sandholzer.)
2. Negro Health Problems and National Defense.  
T. W. Turner; *Hampton Institute*. (30 min.)
3. War Aspects of the Pollution Problem.  
L. A. Sandholzer; *U. S. Public Health Service, Norfolk*. (Lantern, 30 min.)

## SATURDAY, MAY 9—9:00 A. M.

1. Stream Ecology and Available Food.  
Leonard I. Katzin; *U. S. Public Health Service, Norfolk*. (10 min.)
2. Dissociation of *Bacillus Albolacticus*.  
F. S. Orcutt; *Virginia Polytechnic Institute*. (Lantern, 10 min.)
3. Comparison of Total Bacterial Plate Counts of Soils Accurate Only After Deflocculation of Samples.  
F. S. Orcutt and A. B. Stuart; *Virginia Polytechnic Institute*. (Lantern, 10 min.)
4. The Possibility of False Interpretations in Tests for Acid Production from Carbohydrates Due to Peptone Decomposition.  
F. S. Orcutt and L. A. Nutting; *Virginia Polytechnic Institute*. (Lantern, 10 min.)
5. Physiological Differentiation of Members of the *Bacillus Mesentericus* Group.  
W. B. Coffee and F. S. Orcutt; *Virginia Polytechnic Institute*. (Lantern, 10 min.)
6. Comparison of Methods for the Detection of Coliform Bacteria in Milk.  
L. A. Sandholzer, A. Walker and M. Strong; *U. S. Public Health Service, Norfolk*. (15 min.)

## Section of Biology

P. M. PATTERSON, *Chairman*  
RAYMOND L. TAYLOR, *Vice-Chairman*  
PAUL R. BURCH, *Secretary*

FRIDAY, MAY 8—9:30 A. M.

*Ball Room, Hotel Roanoke*

1. A Genetic Study of Certain Virginia Family Lives.  
Edward S. C. Handy; *Fairfax, Va.* (15 min.)
2. Spermatogenesis in the Cestode *Hymenolepsis anthocephalus*  
Van Gundy.  
Arthur W. Jones; *University of Virginia.* (Lantern, 10 min.)
3. A New Auridistome (Trematode) from the Snapping Turtle.  
Bruce D. Reynolds; *University of Virginia.* (Lantern, 10 min.)
4. Temperature Drop and Plant Mortality.  
Orland E. White; *The Blandy Experimental Farm, University of Virginia.* (Lantern, 15 min.)
5. Chromosome Numbers and Phylogenetic Relationships in Euphorbiaceae.  
Bruce A. Perry; *The Blandy Experimental Farm, University of Virginia.* (10 min.)
6. A Preliminary Study of the Chromosomes of Several Virginia Snails.  
Paul R. Burch and Ladley Husted; *Radford State Teachers College and University of Virginia.* (Lantern, 10 min.)
7. Manganese Toxicity Associated with Phosphorus Deficiency in Tobacco.  
G. M. Shear; *Virginia Agricultural Experiment Station, Blacksburg.* (Lantern, 10 min.)
8. The Garden Slug, *Limax maximus* L., as a Detector of Mustard Gas, Dichlor-Ethyl Sulfide.  
Frances McCorkindale and Paul R. Burch; *Radford State Teachers College.* (Lantern, 5 min.)
9. The Salamanders of Virginia.  
Charlotte M. Fisher and Paul R. Burch; *Radford State Teachers College.* (Lantern, 15 min.)
10. Influence of Algae within the Eggs of *Ambystoma* Upon Hatching of Their Eggs.  
Amos M. Showalter; *Madison College.* (Lantern, 10 min.)
11. Phases of Nematocyst-Formation by *Hydra* and the Structure of Its Penetrant's Tube or "Thread".  
Bruce D. Reynolds, William A. Kepner, Lewis Goldstein and James H. Taylor; *University of Virginia.* (A Demonstration.)

## Botany Division

SATURDAY, MAY 9—9:00 A. M.

*Parlor 137, Hotel Roanoke*

1. Cytogenetic Studies on Martyniaceae.  
Bruce A. Perry; *The Blandy Experimental Farm, University of Virginia*. (Lantern, 10 min.)
2. Three Extraordinary Experiences with Plants.  
Orland E. White; *The Blandy Experimental Farm, University of Virginia*. (7 min.)
3. Investigations on Chromosome Aberrations in Phlox.  
James R. Meyer; *The Blandy Experimental Farm, University of Virginia*. (Lantern, 15 min.) (Introduced by Orland E. White.)
4. The Influence of Carbon Tetrachloride on the Toxic Efficiency of Certain Volatile Organic Compounds.  
R. N. Jefferson; *Virginia Agricultural Experiment Station, Blacksburg*. (Lantern, 15 min.)
5. Influence of Carbohydrate Supplements on Ammonification and Nitrification of Urea and Calcium Cyanamid in Plant Bed Soils.  
R. G. Henderson; *Virginia Agricultural Experiment Station, Blacksburg*. (Lantern, 15 min.)
6. Practical Uses of Plant Hormone 1-Naphthalene Acetic Acid.  
Lester Van Middlesworth; *Piedmont Apple Products Corporation, Charlottesville*. (10 min.)
7. Comparative Respirational Rates of a Xerismatic Series of Bryophytes.  
Paul M. Patterson; *Hollins College*. (Lantern, 15 min.)
8. Mosses from Mountain Lake.  
Paul M. Patterson; *Hollins College*. (5 min.)
9. Results of Tomato Spray Tests.  
R. G. Henderson and S. A. Wingard; *Virginia Agricultural Experiment Station, Blacksburg*. (Lantern, 15 min.)



## Zoology Division

SATURDAY, MAY 9—9:00 A. M.

Ball Room, Hotel Roanoke

1. A Check-List of the Chordates of Virginia.  
John W. Bailey; *University of Richmond*. (Lantern, 15 min.)
2. A Preliminary Report on the Reproductive System of the Ribbed-Mussel, *Volsella demissus* Dillwyn.  
Roy P. Ash; *Virginia Fisheries Laboratory, College of William and Mary*. (Lantern, 15 min.)
3. Notes on the Turbellarian Fauna of the Rochester (N. Y.) Area. I. Anatomy of *Macrostomum ontarioensis* n. sp.  
Frederick F. Ferguson; *Norfolk College of William and Mary-Virginia Polytechnic Institute*. (Lantern, 10 min.)
4. Breeding Habits of the Gray Squirrel in Virginia.  
Abnormal Pelage of the Gray Squirrel.  
Richard H. Cross, Jr.; *Virginia Polytechnic Institute*. (Lantern, 12 min.)
5. A Taxonomic Distinction Between *Cyllene robiniae* (Forst) and *Cyllene carvae* Gahan.  
Edward W. King; *Virginia Polytechnic Institute*. (Lantern, 10 min.)
6. A Study of the Incidence and Pathogenicity of *Chabertia ovina* in Sheep.  
W. L. Threlkeld; *Virginia Agricultural Experiment Station, Blacksburg*. (Lantern, 10 min.)
7. Notes on the Musculature of the Male Genitalia of *Hae-monchus contortus*.  
W. L. Threlkeld and M. E. Henderson; *Virginia Agricultural Experiment Station*. (Lantern, 15 min.)
8. Identification of the Larval Stages of the Blue Crab, *Callinectes sapidus* Rathbun.  
Sewell H. Hopkins and John H. Lochhead; *Texas A. and M. College and Virginia Fisheries Laboratory, College of William and Mary*. (Lantern, 15 min.)
9. Hatching the Larvae of the Blue Crab, *Callinectes sapidus* Rathbun.  
Margaret S. Lochhead and Curtis L. Newcombe; *Virginia Fisheries Laboratory and Biology Department, College of William and Mary*. (Lantern, 15 min.)
10. Observations on the Catfish Fishery of the James River Area.  
R. W. Menzel; *Virginia Fisheries Laboratory and Biology Department, College of William and Mary*. (10 min.)

## Section of Chemistry

F. H. FISH, *Chairman*

L. J. DESHA, *Secretary*

FRIDAY, MAY 8—9:30 A. M.

*Parlor A-D, Hotel Roanoke*

1. The Chemistry of Alcoholic Fermentation.  
Lester Van Middlesworth; *University of Virginia*. (15 min.)
2. Qualitative and Quantitative Tests for Acetic Acid.  
J. B. Lucas, Fred W. Bull and E. P. Painter; *Virginia Polytechnic Institute*. (12 min.)
3. Dissolution of Urinary Calculi.  
P. C. Scherer and L. W. Claffey; *Virginia Polytechnic Institute*. (10 min.)
4. The Synthesis and Purification of Phenol Sulfonphthalein (Phenol Red).  
J. B. Lucas and H. J. Osborn; *Virginia Polytechnic Institute*. (10 min.)
5. The Nitration of Lepidine and 2-Chlorolepidine.  
Stanley E. Krahler and Alfred Burger; *University of Virginia*. (15 min.)
6. Vapor Phase Hydrolysis with Copper Catalysts Prepared from Complex Compounds.  
James W. Cole and L. Van Middlesworth; *University of Virginia*. (10 min.)
7. Desulfurization of Rayon by Organic Solvents.  
P. C. Scherer and W. M. Davis; *Virginia Polytechnic Institute*. (5 min.)
8. Reactions of Cellulose in Liquid Sulfur Dioxide.  
P. C. Scherer and L. C. Brooks; *Virginia Polytechnic Institute*. (5 min.)
9. Reaction between Cellulose Nitrate and Diethylamine.  
P. C. Scherer and C. F. Rogers; *Virginia Polytechnic Institute*. (5 min.)
10. The Hydrolysis of Wood.  
P. C. Scherer and F. I. Brownley; *Virginia Polytechnic Institute*. (5 min.)

11. Some Conservation-For-Defense Ideas Applicable in Chemical Laboratories.  
Robert F. McCrackan; *Medical College of Virginia*. (12 min.)
12. The Southern Association for the Advancement of Science.  
Wortley F. Rudd; *Medical College of Virginia*. (5 min.)
13. A Biography of the Neutrino.  
Arnold M. Lansche; *Randolph-Macon College*. (8 min.)
14. Chemical Warfare—Offensive and Defensive.  
R. G. Robb; *College of William and Mary*. (20 min.)
15. A V.A.S. Member Studies the Economic Situation of the Dominican Republic.  
Joseph Z. Schneider; *Madison College*. (20 min.)
16. Photo-Electric Measurement of Submarine Illumination.  
C. L. Newcombe, G. W. Ewing and A. R. Armstrong;  
*College of William and Mary*. (10 min.)

## Fourth Symposium on Organic Analytical Reagents

FRIDAY, MAY 8—2:00 P. M.

*Parlor A-D, Hotel Roanoke*

17. Introduction.  
John H. Yoe; *University of Virginia*. (5 min.)
18. A Progress Report on Analytical Organic Reagent Studies.  
W. J. Frierson; *Hampden-Sydney College*. (5 min.)
19. Organic Reagents for the Determination of Iron.  
Wm. E. Trout, Jr.; *Mary Baldwin College*. (15 min.)
20. 8-Mercapto-quinoline Studies.  
W. L. Bruce and J. R. Taylor; *Washington and Lee University*. (5 min.)
21. Structure and Analytical Reactivity.  
J. R. Taylor; *Washington and Lee University*. (15 min.)
22. The Reactivities of Certain Organic Compounds with Inorganic Ions.  
F. H. Fish, P. J. Walkauskas and M. Fox; *Virginia Polytechnic Institute*. (5 min.)
23. A Progress Report on Inorganic Analysis With Organic Reagents.  
E. Louise Wallace and Alfred R. Armstrong; *College of William and Mary*. (5 min.)
24. Organic Solvents and Wash Liquids.  
Landon A. Sarver; *American Viscose Corporation*. (20 min.)
25. *Syn*-dianisalacetoneoximehydroxylamine as a New Organic Reagent for the Gravimetric Determination of Tungstates.  
A. Letcher Jones and John H. Yoe; *University of Virginia*. (15 min.)
26. Sodium Catechol Disulfonate as a New Colorimetric Reagent for Iron.  
A. Letcher Jones and John H. Yoe; *University of Virginia*. (5 min.)
27. Spectrophotometric Studies of Some Complex Copper Compounds.  
James W. Cole, M. Brooks Shreaves and James E. Bowden; *University of Virginia*. (20 min.)
28. Studies in Organic Analytical Reagents: New Colorimetric Reagents for Silver, Copper, Cobalt, Zirconium, and Phenothiazine.  
John H. Yoe and Lyle G. Overholser; *University of Virginia*. (20 min.)
29. Reactivity of Substituted Thioureas.  
Lyle G. Overholser and John H. Yoe; *University of Virginia*. (5 min.)

## Symposium on Medicinal Chemistry

SATURDAY, MAY 9—9:00 A. M.

*Parlor A-D, Hotel Roanoke*

30. Introduction.  
Alfred Burger; *University of Virginia.*
31. Recent Developments in Medicinal Chemistry.\*  
C. R. Addinall; *Merck & Co., Rahway, N. J.*
32. Sulfanilamide Chemistry\*  
Jackson P. English; *American Cyanamid Company, Stamford, Conn.*
33. Chemistry and Pharmacology of Newer Local Anesthetics.\*  
J. Stanton Pierce and H. B. Haag; *University of Richmond and Medical College of Virginia.*
34. A Basis for the Chemotherapy of Tuberculosis.\*  
Frederick Bernheim and Alfred Burger; *Duke University and University of Virginia.*
35. Business Meeting and Election of Officers. (11:40 A. M.)

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\*Discussion opened by Luther R. Modlin, Jr., Division of Chemotherapy, U. S. Public Health Service, Washington, D. C.

## Section of Education

F. G. LANKFORD, JR., *Chairman*

FRED M. ALEXANDER, *Secretary*

FRIDAY, MAY 8—9:30 A. M. TO 12:30 P. M.

*Parlor 137, Hotel Roanoke*

1. Suggestions for an Educational Therapy in Problem and Delinquent Children.  
H. Riese; *Honorary Worker with the Richmond Juvenile and Domestic Relations Court, Richmond, Va.*
2. The Scientific Aspect of Supervision.  
J. A. Rorer; *Extension Department, University of Virginia.*
3. Virginia Fisheries Laboratory, Program of Educational Work in Marine Biology for Fisheries and Local Communities.  
B. B. Shepherd; *College of William and Mary.*
4. A Study of Drop-Outs in the Elementary Schools of Danville, Virginia for the Session of 1938-39.  
Wister Harold Ford; *Bellevue Public School, Danville, Va.*
5. The Use of Evaluative Criteria in Virginia High Schools.  
E. C. Shortt; *University of Virginia.*

FRIDAY, MAY 8—2:00 P. M. TO 5:00 P. M.

*Parlor 137, Hotel Roanoke*

6. Discussion on Educational Research in Virginia.  
C. E. Myers; *State Board of Education, Richmond, Va.*
7. Business Meeting.

## Section of Engineering

P. S. DEAR, *Chairman*

J. B. JONES, *Secretary*

FRIDAY, MAY 8—9:30 A. M.

*Parlor 324, Hotel Roanoke*

1. Corrosion of Metals by the Constituents of Tallol.  
LeRoy Hutzler III and Albert H. Cooper; *Virginia Polytechnic Institute*. (10 min.)
2. Utilization of Lespedeza sericea for Annual Farm Tannin Crop.  
Frank C. Vilbrandt, A. B. Massey and J. Emmett Hines; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
3. Utilization of Several Virginia Weeds for Annual Tannin Crop.  
Frank C. Vilbrandt, A. B. Massey and W. J. Halvorsen; *Virginia Polytechnic Institute*. (Lantern, 10 min.)
4. Rate of Absorption of Carbon Dioxide Monoethanolamine Water Solutions.  
J. I. Butzner, A. G. Grant, R. R. Ross and V. C. Williams; *University of Virginia*. (Lantern, 15 min.)
5. Equilibrium Partial Pressures of Carbon Dioxide over Monoethanolamine Water Solutions.  
W. P. Cowgill; *University of Virginia*. (10 min.)
6. Raw Materials for Defense.  
Albert H. Cooper; *Virginia Polytechnic Institute*. (15 min.)
7. Dehydration of Apples.  
Frank C. Vilbrandt and Raymond Friedman; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
8. The Side Entering Mixer as a Gas-Liquid Contacting Device.  
J. H. Rushton; *University of Virginia*. (Lantern, 15 min.)
9. Power Measurement for Side Entering Mixers.  
F. L. Foerster and W. H. Tucker; *University of Virginia*. (10 min.)
10. Fluid Flow Patterns as Determined by the Schlieren Method.  
H. F. Johnson and V. C. Williams; *University of Virginia*. (Lantern, 15 min.)

11. Float Bodies for the Stabl-Vis Rotameter.  
W. H. McCoy, W. W. Mellen, Jr. and J. H. Rushton; *University of Virginia*. (Lantern, 15 min.)

### BUSINESS MEETING

Appointment of Nominating Committee.

FRIDAY, MAY 8—2:00 P. M.

*Parlor 324, Hotel Roanoke*

Continuation of Business Meeting.

12. An Inexpensive Pipe Covering for Prevention of Sweating.  
W. H. Tucker and J. H. Rushton; *University of Virginia*. (5 min.)
13. The Thermodynamic Properties of Air.  
V. C. Williams; *University of Virginia*. (Lantern, 10 min.)
14. Automatic Roof Ventilator Tests.  
E. M. Simons; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
15. Air-Drying of Colloidal Nitro-Cotton.  
Fred W. Bull, A. F. Giacco and J. M. Mount; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
16. Factors Affecting Spray Drying.  
W. C. Carnell and Albert H. Cooper; *Virginia Polytechnic Institute*. (10 min.)
17. Explosive Shattering of Manganese Ore.  
Fred W. Bull and E. R. Griffith; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
18. Silica-Gel as a Means of Studying Gas-Liquid Interfacial Area.  
R. S. McDaniel, E. F. White, Jr. and J. H. Rushton; *University of Virginia*. (Lantern, 15 min.)
19. The Effect of Negligence and Misadjustment on the Automotive Engine.  
Martin Stark and J. B. Jones; *Virginia Polytechnic Institute*. (15 min.)
20. Linear Thermal Expansion Coefficients of Materials at Low Temperatures by the Fizean Method.  
W. H. Canham; *University of Virginia*. (Lantern, 10 min.)
21. Elastic and Strength Properties of Wood in Flexure.  
E. G. Stern; *Virginia Polytechnic Institute*. (Lantern, 15 min.)



SATURDAY, MAY 9—9:00 A. M.

*Parlor 324, Hotel Roanoke*

22. Industrial Waste Disposal Survey in Virginia.  
Fred W. Bull, E. T. Darden and R. E. Sentz; *Virginia Polytechnic Institute*. (15 min.)
23. Utilization of Carbide Generator Wastes for Production of Arsenate Spray.  
Frank C. Vilbrandt and Ralph H. Bogle; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
24. Design of Calcium Chlorate Cell to Utilization of Solvay Process Waste.  
Frank C. Vilbrandt and William C. Miller; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
25. Application of Osmosis to the Recovery of Caustic Soda in the Rayon Industry.  
Frank Keel and Albert H. Cooper; *Virginia Polytechnic Institute*. (10 min.)
26. Design of Distribution Plate for Absorption Tower.  
Fred W. Bull, J. K. Musick and W. W. Boisture; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
27. Factors Involved in Conveyor Mixing of Heterogeneous Solids.  
Frank C. Vilbrandt and Guido J. Coli; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
28. Simplified Method for the Approximation of Spanwise Airload Distribution on Tapered Airplane Wings.  
L. F. Seltzer; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
29. Dry-Pressed, Light-Weight Refractories from Virginia Kyanite.  
A. W. Allen; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
30. Protecting Domestic Hot Water Heating Coils with Sodium Hexametaphosphate.  
P. H. McGauhey and F. C. Larson; *Virginia Polytechnic Institute*. (Lantern, 15 min.)
31. Simplified Method of Determining True Areas of a Closed Traverse.  
A. Lee Smith; *College of William and Mary-Virginia Polytechnic Institute, Norfolk*.

## Section of Forestry

J. H. JOHNSON, *Chairman*

GEORGE DEAN, *Secretary*

FRIDAY, MAY 8—10:00 A. M.

*Parlor 217, Hotel Roanoke*

1. Work of the State Forestry Department.  
Fred Pederson; *State Forester*. (20 min.)
2. An Analysis of Recent Virginia Legislation and of Recently Proposed Federal Legislation for Public Regulation of Methods of Cutting Privately-Owned Forests.  
Chapin Jones; *University of Virginia*. (20 min.)
3. Forestry Work of the Soil Conservation Service.  
Lawrence Small; *Soil Conservation Service*. (20 min.)
4. Farm Forestry in Virginia.  
Wilbur O'Byrne; *Extension Forester*. (20 min.)

FRIDAY, MAY 8—2:00 P. M.

*Parlor 217, Hotel Roanoke*

5. Technicolor Films of the George Washington National Forest.  
M. C. Howard; *Supervisor, George Washington National Forest*. (70 min.)
6. Soil Conservation Service Forestry Work in Tidewater Virginia.  
Howard C. Lull; *Soil Conservation Service*. (10 min.)
7. The Forestry Education Work of a Private Concern.  
J. H. Johnson; *The Chesapeake Corporation*. (10 min.)

## Section of Geology

RAYMOND S. EDMUNDSON, *Chairman*

ROY J. HOLDEN, *Vice-Chairman*

WM. M. MCGILL, *Secretary*

FRIDAY, MAY 8—9:30 A. M.

*Parlor 318, Hotel Roanoke*

1. Ground-Water Work of the Virginia Geological Survey.  
William M. McGill; *Virginia Geological Survey*. (Maps, 10 min.)
2. Geologic Structure and Quality of Ground Water in the Virginia Coastal Plain.  
D. John Cederstrom; *U. S. Geological Survey, Charlottesville, Virginia*. (Slides, 12 min.)
3. History of the Development of Geology of the James River Basin, Virginia.  
Joseph K. Roberts; *University of Virginia*. (15 min.)
4. Notes on the Athens Fauna.  
Alfred G. Fischer; *Virginia Polytechnic Institute*. (Slides, 10 min.)
5. Weathering of Spessartite.  
Roy J. Holden; *Virginia Polytechnic Institute*. (15 min.)
6. A Profile Study of Three Soils Developed from Material Weathered from Limestone.  
S. S. Obenshain and C. G. Morgan; *Virginia Agricultural Experiment Station*. (Slides, 12 min.)
7. Fold Structures in the Pre-Cambrian Complex of the Blue Ridge in Carroll and Grayson Counties, Virginia.  
Alfred C. Hawkins; *Soil Conservation Service, Winchester, Va.* (Slides, maps, 10 min.)
8. Minor Tensional Structures Associated with Appalachian Folds.  
Edward C. H. Lammers; *Washington and Lee University*. (Slides, 12 min.)

FRIDAY, MAY 8—2:00 P. M.

*Parlor 318, Hotel Roanoke*

9. Mining Under the Priorities System.  
Marcellus H. Stow; *Assistant Administrator, Mining Branch, War Production Board.* (15 min.)
10. Industrial Mineral Problems of Virginia.  
John T. McCormick and Charles E. Sears, Jr.; *Virginia Polytechnic Institute.* (Slides, 12 min.)
11. Some Piedmont Problems.  
Arthur Bevan; *Virginia Geological Survey.* (15 min.)
12. Relations and Age of the Catoctin Formation in Central Virginia.  
Robert O. Bloomer; *University of Virginia.* (Slides, 10 min.)
13. A Review of the Literature on Granodiorite in Virginia.  
Arthur A. Pegau; *University of Virginia.* (12 min.)
14. A Limestone Cobble on the Blue Ridge East of Irish Creek, Virginia.  
Edward Steidtmann; *Virginia Military Institute.* (Map, specimens, 12 min.)
15. The Occurrence of Rhodonite in Piedmont Virginia.  
William C. Overstreet; *University of Virginia.* (Slides, 12 min.)
16. An Unreported Rock Type from the Burkeville-Crewe Area, Virginia.  
John E. Husted; *University of Virginia.* (Map, slides, specimens, 12 min.)
17. Limestone Mining in Northern Virginia.  
Charles E. Bass; *M. J. Grove Lime Company.* (Charts, 15 min.)
18. Geology of the Southwestern Part of Walker Mountain in Smyth and Washington Counties, Virginia.  
Raymond S. Edmundson; *Virginia Geological Survey.* (Slides, 12 min.)

## BUSINESS MEETING

Reports of Committees.

Election of Officers.

## Section of Medical Sciences

J. E. KINDRED, *Chairman*

GUY W. HORSLEY, *Secretary*

FRIDAY, MAY 8—2:00 P. M.

*Parlor 424, Hotel Roanoke*

1. A Simplified Method for the Determination of Free and Ester Cholesterol in Blood.  
H. Gershberg (by invitation) and J. C. Forbes; *Department of Biochemistry, Medical College of Virginia.* (Lantern, 10 min.)
2. Urinary Chemiluminescence in Alcaptonuria, Hereditary and Experimental.  
Lynn D. F. Abbott, Jr. and C. Lester Salmon, Jr. (by invitation); *Department of Biochemistry, Medical College of Virginia.* (10 min.)
3. The Cellular Structure of the Cortex in the Marsupial Brain.  
Walther Riese; *Medical College of Virginia.* (Lantern, 15 min.)
4. A Quantitative Study of the Bone Marrow of the Albino Rat.  
James E. Kindred; *School of Anatomy, University of Virginia.* (Lantern, 15 min.)
5. Anatomic Changes in the Bovine Uterus During Pregnancy.  
Ray D. Hatch; *Virginia Polytechnic Institute.* (Lantern, 15 min.)
6. Behavior of Serum Proteins and Blood Volume after Infusions of Plasma and Saline.  
Edwin W. Shearburn; *University of Virginia.* (10 min.)
7. Exposure of Animals to Low Barometric Pressures.  
S. W. Britton and R. F. Kline; *Department of Physiology, University of Virginia Medical School.* (Lantern, 15 min.)
8. Business Session and Election of Officers.

## Section of Psychology

W. M. HINTON, *Chairman*

EVELYN RASKIN, *Secretary*

FRIDAY, MAY 8—9:30 A. M.

*Parlor 317, Hotel Roanoke*

1. An Experimental Study of a Possible Objective Criterion of "Tension".  
James L. Longley; *College of William and Mary*. (15 min.)
2. An Experimental Comparison of Individual Differences in Visual "Sensation" and "Perception".  
Lawrence L. Leshan; *College of William and Mary*. (15 min.)
3. A Comparison of the Conditioning of Voluntary, Semi-Voluntary, and Non-Voluntary Responses, Established by Simultaneous Training.  
Richard H. Henneman; *College of William and Mary*. (15 min.)
4. A New Type of Finger Dexterity Test.  
John M. McGinnis; *Hollins College*. (15 min.)
5. Retention as a Function of Original Reinforcement.  
Frank W. Finger; *University of Virginia*. (Slides, 20 min.)
6. The Measurement of Carefulness-Impulsiveness by Self-Inventory.  
D. M. Allan; *Hampden-Sydney College*. (15 min.)
7. Experimental Method or "Domestic Science"?  
David K. Spelt; *Mary Baldwin College*. (15 min.)

FRIDAY, MAY 8—2:00 P. M.

8. Round Table Discussion.  
Speaker: Professor Stuart H. Britt; *George Washington University*—"Psychology and the War Effort".
9. Business Meeting.

SATURDAY, MAY 9—9:00 A. M.

10. A Survey of Current Literature on War Neuroses.  
J. L. Benson; *Washington and Lee University*. (15 min.)

11. A Comparison of General and Specific Attitudes Toward War.  
John Martire; *Washington and Lee University*. (15 min.)
12. The College Personnel Program in a Nation at War.  
Royal B. Embree, Jr.; *College of William and Mary*. (20 min.)
13. The Level of Aspiration Technique as an Experimental Method for the Study of Morale.  
James A. Bayton; *Virginia State College*. (Slides, 15 min.)
14. A Consecutive Study of the Schoolroom Behavior of Children in Relation to the Teachers' Dominative and Socially Integrative Contacts.  
Mary Frances Reed; *Virginia Polytechnic Institute*. (15 min.)
15. Abilities, Interests and Measurement.  
F. G. Tice; *Hollins College*. (Slides, 15 min.)









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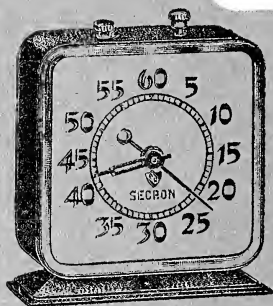
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